

IN THE CLAIMS:

1.(currently amended): A process for upgrading a C₄, C₅ or mixed stream thereof comprising normal alkane and isoalkane to motor fuel comprising the steps of:

- (a) separating the isoalkane from the normal alkane;
- (b) subjecting a portion of the separated normal alkane to dehydrogenation in a dehydrogenation unit to produce a normal alkene and dienes as an effluent; ~~and~~
- (c) selectively hydrogenating the effluent from (b) under conditions to selectively hydrogenate said dienes; and
- (e) ~~(d) feed~~ feeding the separated isoalkane and the normal alkene to an alkylation unit where the isoalkane is reacted with the normal alkene to form a branched alkane.

2.(original): The process according to claim 1 wherein a portion of the separated normal alkane is subjected to skeletal isomerization to produce more isoalkane.

3.(currently amended): The process according to claim 1 wherein the effluent from the dehydrogenation is selectively ~~hydrogenation~~ hydrogenated under conditions to remove dienes.

4.(original): An integrated process for upgrading a C₄, C₅ or mixed stream thereof comprising normal alkane and isoalkane to motor fuel comprising the steps of:

- (a) separating isoalkane from normal alkane;
- (b) isomerizing a portion of the separated normal alkane to isoalkane;

(c) dehydrogenating a portion of the separated normal alkane to produce normal alkene; and

(d) reacting the isoalkane and normal alkene under alkylating conditions to product isoalkane.

5.(original): The process according to claim 4 wherein said separating is by fractional distillation.

6.(cancelled):

7.(currently amended): A process for the production of isooctane from a mixed C₄ alkane stream comprising the steps of:

(a) separating isobutane from normal butane;

(b) isomerizing a portion of the separated normal butane to isobutane;

(c) dehydrogenating a portion of the separated normal butane to produce normal butenes and dienes as an effluent;

(d) selectively hydrogenating ~~normal butenes~~ the effluent from (c) under conditions to selectively hydrogenate said dienes; and

(e) reacting the isobutane and normal butenes under alkylating conditions to ~~product~~ produce isooctane.

8.(currently amended): A process for the production of isodecane from a mixed C₅ alkane stream comprising the steps of:

(a) separating isopentane from normal pentane;

(b) isomerizing a portion of the separated normal pentane to ~~skeletal~~

isomerization isopentanes;

(c) dehydrogenating a portion of the remainder of the separated normal pentane to produce normal pentenes and dienes as an effluent;

(d) selectively hydrogenating ~~normal pentenes~~ the effluent from (c) under conditions to selectively hydrogenate said dienes; and

(e) reacting the isopentane with the normal pentenes under alkylating conditions to ~~product~~ produce isodecane.
